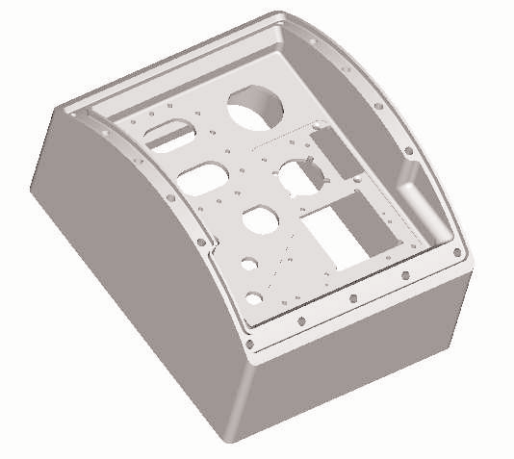
Model-Based Manufacturing Technologies

Manufacturing Technologies

Sandia's Manufacturing Science & Technology Center is a leader in the development and implementation of integrated solid-model-based manufacturing applications. The Team provides solid-model-based manufacturing process-related solutions for its customers and their customers.

Capabilities

- Modeling development—If your design team is using Pro-E or Solid works and you need additional resources or expertise to solve difficult modeling issues, including tooling and fixture design and fabrication, Team staff can support your design effort. They can develop complete models, conduct design reviews and support classified models. They can assist in making your models ready for the production floor.
- Product Data Management—Sandia has moved to Matrix One as the Product Data Management (PDM) tool of choice. If you need assistance with getting your project into Matrix One and maintaining revision control, staff is available to work with your team. Examples of the strength of this approach include maintenance and accessibility of data related to design definition, manufacturing, inspection and measurement, product acceptance, process plans and qualification, all in one location. The Team can assist you in facilitating concurrency in your design activities (which speeds up the design process) without losing control.



This casing for a test assembly was the first totally model-based component certified for War Reserve stores.

- Model/Product Realization Integration—Your design model, along with Matrix One can be used to integrate the entire life cycle of your project. Machine and inspection programs, tooling and fixture designs, test and inspection results, design reviews can be integrated into one package, making acceptance considerably easier. The Team can make suggestions that will make your configuration tasks a minimal part of your acceptance processes.
- Design for Manufacturability—With years of

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machining and design experience, the Team can be a part of your design team and support your design from a manufacturability perspective. The results will lower your fabrication time and cost, improve reliability, and increase yields.

Resources—How the Team Helps its Clients

- Use numerical control parts programming, with or without drawings, for milling machines, lathes, wire EDM and other similar processes.
- Provide mechanical design and can supply formal drawing packages if required.
- Provide Pro/E work on classified and unclassified projects.
- Provide post processor development, implementation and maintenance.
- Maintain communication and downloading capabilities for CNC machines.
- Maintain and upgrade system-related software and hardware.
- Review manufacturing potential.
- Create sheet metal flat patterns.

Accomplishments—How the Team has Helped its Clients

- Started an ongoing training and mentoring program for machinists in the use of Pro/NC software.
- Successfully completed a transition from UNIX-based workstation operating systems to NT workstations.
- Completed the transition from legacy NC programming software tools to the Pro/ENGINEER suite of products.
- Served as beta-test site for Parametric Technologies Corporation's Pro/NC Version 20 and participated in migration testing for version 2001.
- Won DOE NNSA Weapons Award for Excellence.
- R&D 100 Award for mechanical design support for Transponder.

Who the Team Is

- The Team is comprised of skilled numerical control programmers.
- The Team can offer suggestions to make a design more manufacturable.
- The Team includes knowledgeable staff with extensive experience in using Pro/ENGINEER and Pro/NC.
- The Team can function as an outstanding support staff for engineering workstations and networks.

Contact:

Terrance Smith, (505) 844-7438
ttsmith@sandia.gov

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